CAS SEARCH

AN 1979:120357 CAPLUS
DN 90:120357
TI Pelletizing a **sulphur-bentonite clay** mixture
IN Caldwell, Bob L.; Fletcher, Ronald B.
PA Agri-Prassco Joint Venture, Can.; Agri-Sul Equipment
SO U.S., 5 pp.
CODEN: USXXAM
DT Patent
LA English
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 4133669	A	19790109	US 1977-789094	19770420
	AU 7835102	A1	19791018	AU 1978-35102	19780414
	CA 1118227	A1	19820216	CA 1978-301223	19780417
PRAI	US 1977-789094		19770420		

AB A molten (245°F) mixt. of 1-3 parts bentonite dust and 7-9 parts S is passed into the upper chamber of pelletizing vessel and droplets fall through a perforated plate in the lower annealing chamber. This chambers contains liq. fertilizer, temp. 50-120°F, and as the S-bentonite droplets pass through the cooling zone they are annealed into hard smooth pellets by the time they reach the bottom of the pelletizing vessel where they are collected and dried in warm dry air giving a water-degradable prill.

L3 ANSWER 8 OF 15 PASCAL COPYRIGHT 2003 INIST-CNRS. ALL RIGHTS RESERVED. on STN
AN 2002-0411111 PASCAL
CP Copyright © 2002 INIST-CNRS. All rights reserved.
TIEN Leaching losses of **sulphur** from different forms of **sulphur** fertilizers: a field lysimeter study
AU RILEY N. G.; ZHAO F. J.; MCGRATH S. P.
CS Agriculture and Environment Division, IACR-Rothamsted, Harpenden, Hertfordshire AL5 2JQ, United Kingdom
SO Soil use and management, (2002), 18(2), 120-126, 30 refs.
ISSN: 0266-0032 CODEN: SUMAEU
DT Journal
BL Analytic
CY United Kingdom
LA English
AV INIST-20853, 354000101568270070
AB Inputs and outputs of **sulphur** (S) were quantified over a three year period using field lysimeters containing undisturbed 60cm deep soil monoliths of a sandy loam. There were four treatments, including a control (no S) and three forms of **sulphur** fertilizers: ammonium

are given.

AN 1988:227561 BIOSIS
DN BA85:116796
TI **SULFUR**-SODIUM BENTONITE MIXTURES AS **SULFUR FERTILIZERS** 1. THE EFFECTS OF **SULFUR**-SODIUM BENTONITE RATIOS ON THE RATE OF DISPERSION AND PARTICLE SIZE DISTRIBUTION OF ELEMENTAL **SULFUR** DISPERSED FROM LABORATORY-PRODUCED PRILLS.
AU BOSWELL C C; OWERS W R; SWANNEY B; ROTHBAUM H P
CS MINIST. AGRIC. FISHERIES, INVERMAY AGRIC. RES. CENT., MOSGIEL, NEW ZEALAND.
SO FERT RES, (1988) 15 (1), 13-32.
CODEN: FRESDF. ISSN: 0167-1731.
FS BA; OLD
LA English
AB **Sulfur**/sodium bentonite **fertilizer** prills were made by blending between 5 and 40% by weight of a swelling sodium **bentonite clay** with molten **sulfur** (S) and chilling droplets of the mixtures in oil. The resulting prills were hard and dust free and thus offered a suitable form for elemental **sulfur** (S°) transportation and application. The prills were stable at normal room temperature and RH. Prill strength was much reduced by prolonged storage at 80% RH. With 15% or more bentonite the bulk resistivity was sufficiently low that no electrostatic charge build-up was likely and consequently there was little risk of spontaneous combustion. Prills containing 10% or more bentonite disintegrated when placed in water and both the rate of dispersion and the fineness of the dispersed S° particles increased bentonite content. Bentonite contents of 15-20% appeared to offer the best combination of rapid prill dispersion, fine dispersed S° particle size, and high S° content.

L6 ANSWER 5 OF 11 CABA COPYRIGHT 2003 CABI on STN

AN 2002:139173 CABA
DN 20023058155
TI **Fertilizer** production and environmental protection: Petrokemija Ltd.
Fertilizer Company
AU Losso, I.; Schultz, J. J. [EDITOR]; Waggoner, D. R. [EDITOR]
CS Fertilizer Production, Petrokemija Ltd., Fertilizer Company, Aleja Vukovar 4, Kutina 44320, Croatia.

SO Proceedings of an International Workshop on Current Environmental Issues
of Fertilizer Production, Prague, Czech Republic, June 7-9, 1999, (2002)
pp. 117-125. 2 ref.
Publisher: IFDC - An International Center for Soil Fertility and Agricultural Development. Muscle Shoals
Meeting Info.: Proceedings of an International Workshop on Current Environmental Issues of Fertilizer Production, Prague, Czech Republic,
June 7-9, 1999.
ISBN: 0-99090-133-0
CY United States
DT Book; Book Article; Conference Article
LA English
AB Petrokemija Ltd. **Fertilizer** Company located at Kutina is the only **fertilizer**, carbon black, and **bentonite clay** manufacturer in Croatia. The production processes, the capacity of its production units,
and the nutrient content of various **fertilizer** products are discussed.
Rapid economic growth and expansion of the human population have produced
a number of local, regional, and global environmental problems, viz.,
global warming, ozone depletion and water pollution. Environmental issues
are discussed concerning the **fertilizer** industry involve the whole chain
of activities including production, storage, transport, and use of **fertilizers** at Petrokemija. These are the potential of producing gaseous
and solid air pollutants (ammonia, nitrogen oxides, **sulfur** dioxide,
fluoride and solid particulates), waste water pollutants (ammoniacal and
nitrate nitrogen, phosphates, fluorides, oils and suspended solids), and
solid wastes composed of phosphogypsum and calcium fluoride. A phosphogypsum disposal pond as a solution for the major environmental
problem of the phosphogypsum produced from the production of phosphoric
acid by the wet phosphoric acid process, is also discussed.

AN 1979:473665 CAPLUS
DN 91:73665
TI Granular **sulfur**-bentonite mixture for **fertilizer**
IN Caldwell, Bob L.
PA Canadian Superior Oil Ltd., USA
SO Can., 12 pp.
CODEN: CAXXA4
DT Patent
LA English
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	CA 1054821	A1	19790522	CA 1975-235667	19750917
	AU 503623	B2	19790913	AU 1976-17788	19760915
PRAI	CA 1975-235667		19750917		
	US 1976-683900		19760311		

AB An improved method for producing a water-degradable granular solid suspension of elemental S in **bentonite clay** is described. Thus, 1-3 parts (out of 10 parts) dry **bentonite clay** dust was added, with continuous mixing, to 7-9 parts liq. S at 240-300°F. The uniform mixt. was poured onto a wet metal plate or moving wet metal belt, cooled, comminuted, and screened. Lab. tests of resulting granular products indicated they possess good storage properties under high temp. and humidity and disintegrate to fine particles on wetting. Samples having a particle size of -4, +14 mesh and contg. 10% of bentonite were wet-screened after being submerged for 1 h; 85% of the granules passed through 40 mesh and 50% through 80 mesh, indicating that the degraded S granules should be available to plants in a reasonable time.

=> **d his**

(FILE 'HOME' ENTERED AT 06:11:00 ON 16 AUG 2003)

FILE 'AGRICOLA, BIOSIS, BIOTECHNO, CABA, CAPLUS, FEDRIP, FOMAD, FOREGE, FROSTI, FSTA, JICST-EPLUS, PASCAL, PROMT, MEDICONF, NTIS, NUTRACEUT, SCISEARCH, TOXCENTER' ENTERED AT 06:11:28 ON 16 AUG 2003

L1	1085	S BENTONITE AND SULFUR
L2	3	S L1 AND SOIL CONDITIONER
L3	15	S BENTONITE CLAY AND SULPHUR
L4	68	S BENTONITE CLAY AND SULFUR
L5	52	DUP REM L4 (16 DUPLICATES REMOVED)
L6	11	S L5 AND (FERTILIZER OR SOIL CONDITIONER)

sulphate (AS); micronized elemental **sulphur** (MS°); and **bentonite clay** and elemental **sulphur** mixture (BS°). **Sulphur** was applied at the beginning of the experiment in autumn at 50 kg ha^{-1}. Atmospheric deposition varied between 6.7 and 7.8 kg S ha^{-1} yr^{-1}. Leaching losses of S ranged from 35 kg ha^{-1} in the control to 83 kg ha^{-1} in the AS treatment over three years, with dissolved organic S accounting for 6-10% of the S leached. In the first year, 7, 26 and 72% of the applied S was lost to drainage water in the BS°, MS^0 and AS treatments, respectively, and the percentages increased to 33, 75 and 96% by the end of year 3. No significant differences in **sulphur** uptake by herbage were found in any of the harvests except a significant increase in the BS° treatment in the second cut of the second year. Over three years, total S outputs exceeded total S inputs in all treatments, with the control and the AS treatments showing a larger S deficit (34-35 kg ha^{-1}) than the MS^0 (23 kg ha^{-1}) and BS° (7 kg ha^{-1}) treatments. The deficits indicate a depletion of soil S, probably through net mineralization of organic S. The results confirm that sulphate was highly mobile and prone to leaching under the experimental conditions, whereas the slow release characteristics of elemental S, particularly BS°, led to smaller leaching losses and larger residual values.

AN 2000-0485715 PASCAL

TIEN Availability of different forms of **sulphur** fertilisers to wheat and oilseed rape
AU RILEY N. G.; ZHAO F. J.; MCGRATH S. P.
CS Soil Science Department, IACR-Rothamsted, Harpenden, Hertfordshire, AL5 2JQ, United Kingdom
SO Plant and soil, (2000), 222(1-2), 139-147, 23 refs.
ISSN: 0032-079X CODEN: PLSOA2
DT Journal
BL Analytic
CY Netherlands
LA English
AV INIST-4772, 354000091914210120
AB A pot experiment was conducted to compare the availability and efficiency

of three **sulphur** (S) fertilisers to wheat in the first year and oilseed rape in the second year, using six agricultural soils. Four treatments were applied in the initial year: control (no S), two forms of elemental S (either micronised S° particles or a bentonite + S° mixture) and a sulphate fertiliser (ammonium sulphate). In the first year, the micronised S° was as effective as the sulphate fertiliser, both producing similar increases of wheat grain yield (on average 36%) and S uptake (on average 164%) over the control. In contrast, responses to the bentonite + S° form were minimal, indicating a limited S supply. In the second year the control treatment failed to produce seeds in most soils, whereas the micronised S° and sulphate treatments increased seed yields of oilseed rape to an average of 13.4 and 12.9 g pot^{-1}, respectively. The performance of the bentonite + S° varied between soils: two soils produced yields similar to those of the other S fertilisers, while the remaining soils had low yields. To test whether the poor performance of the **bentonite clay** + S° fertiliser was due to the lack of exposure of the prills to physical weathering in the glasshouse, the effect of freeze-thaw action on the fertilisers performance was assessed in a separate pot experiment. The responses in wheat yield and S uptake showed that freeze-thaw did not enhance the physical disruption of the prills or fertiliser effectiveness. These results suggest that the release of available S from the bentonite + S° mixture was too slow to meet the requirement of wheat and oilseed rape.

L3 ANSWER 5 OF 15 CABA COPYRIGHT 2003 CABI on STN

AN 95:39541 CABA
DN 951900318
TI Put a tiger in your crop
SO Fertilizer International, (1994) No. 337, pp. 40, 43.
ISSN: 0015-0304
DT Journal
LA English
AB The development of **sulphur** bentonite as a fertilizer (90% S and 10% **bentonite clay**) is described, and the results of a degradability test